

**BRIEF  
PASSENGER  
CAR  
DATA**  
**—1950—**



**ETHYL CORPORATION**



# BRIEF PASSENGER CAR DATA

1950

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## NOTICE

The specifications and adjustments contained in this booklet have been compiled by the Technical Service Division of the Research Laboratories of the Ethyl Corporation from information supplied by manufacturers of motor cars, ignition apparatus, spark plugs, etc. None of this information represents the results of tests at the Research Laboratories of the Ethyl Corporation.

This information covers the essential characteristics, in ready reference form, of the 1950 passenger car models. It is correct at date of publication, but changes may be made from time to time by motor car manufacturers.

Data on horsepower, torque, compression pressure, etc., is that given by the manufacturer. Methods and technique of testing differ in various engineering departments, so this data is frequently not comparable for different makes of cars.

## GENERAL NOTES

### Valves

Valve tappet clearances are extremely important. Frequent checking of valve tappet clearances will add materially to the proper functioning and long life of valves. Clearances given on the specification sheets are for normal driving conditions. For heavy duty, such as heavy loads or high speed, it may be desirable to give additional clearance.

### Spark Plugs

The spark plug installed and recommended by the factory is shown first in the specifications with the corresponding AC, Auto-Lite or Champion spark plug shown as an alternate. These plugs are designed for average driving conditions. For heavy duty, high speed or long distance driving, it may be necessary to use a colder plug in order to obtain satisfactory spark plug life. The necessity for a colder plug is indicated by rapid electrode wear, blistering of the insulator tip, a very light colored deposit and, in extreme cases, splitting and cracking away of the insulator.

It will seldom be found necessary to change to a plug which is hotter than the factory equipment plug, although very light service may require such a plug. If an engine is not pumping oil and the ignition system is in good shape but the spark plug consistently fouls with excessive carbon deposit — the need for a hotter plug is indicated.

Periodic cleaning of spark plugs by means of an efficient spark plug cleaner is often advantageous.

Spark plug gaps should be set and maintained at factory setting — pitted points should be cleaned and, if badly pitted, replaced. Incorrectly set breaker points will affect ignition timing.

### Ignition Timing

Ignition timing is given in crankshaft degrees and is factory setting. Almost all distributors are provided with some type of calibration enabling the ignition timing to be reset without disturbing the initial distributor setting. Retarded ignition timing will eliminate or reduce detonation but will result in decreased performance and fuel economy. Also, in most cases, an ignition setting somewhat in advance of the factory setting will result in additional performance and economy, although such an ignition setting will require a fuel of higher antiknock value than the standard setting.

### Carburetors

Carburetors should not be adjusted or jets changed except by qualified mechanics. Correct fuel (or float) levels are extremely important to satisfactory performance and fuel economy — factory specifications should be strictly maintained.



# LIST OF ABBREVIATIONS

A.A.	Aluminum Alloy (cylinder heads & pistons)
AC	AC Spark Plug Division, GMC
ADV	Advance
A.I.	Aluminum Industries (valves)
AL	The Electric Auto-Lite Company
Alum.	Aluminum
A.M.A.	Automobile Manufacturers Association
ATC	After Top Dead Center
Auto.	Automatic
Auto. Adj.	Automatic Adjusters
BTG	Before Top Dead Center
Bmep	Brake mean effective pressure
C	Cold (valve adjustment)
Car.	Carter (carburetors)
Centrif.	Centrifugal
C.I.	Cast Iron
Ch. or Champ.	Champion Spark Plug Company
C.N.A.	Chrome Nickel Alloy Iron
Comp. Press.	Compression Pressure
Cr. Sp.	Cranking Speed
DD	Downdraft
Deg.	Degrees
Du.	Dual
Eaton	Eaton Mfg. Company (valves)
Eng.	Engine
Eqpt.	Equipment
Exh.	Exhaust
H	Hot
H.P.	Horsepower
Hyp.	Hypoid (rear axle gearing)
I	In-head (overhead valves)
Int.	Intake
L	L-head
Man.	Manual
Max.	Maximum
Molyb	Molybdenum
No. Cyl.	Number of cylinders
Rec. Press.	Recommended Pressure (tires)
Rich	Rich Manufacturing Company (valves)
R.P.	Rochester Products (carburetors)
S.B.	Spiral Bevel
Silc.	Silchrome
Sin.	Single
Std.	Standard
St. Angle	Seat Angle
Spec.	Special
Str. or Strom.	Stromberg Carburetor Company
Tap. Clear.	Tappet Clearance
TDC	Top Dead Center
Thomp. Prod. or T.P.	Thompson Products, Inc. (valves)
Trans.	Transmission
Vac.	Vacuum
Var.	Various

# SUMMARY OF CHARACTERISTICS

## 1950 PASSENGER CARS

	1949	1950	Change
Number of Manufacturers.....	20	20	—
Number of Models.....	56	64	+8
ENGINE CHARACTERISTICS:			
Average Standard Compression Ratio.....	6.88	7.03	+0.15
Average Optional Higher Comp. Ratio.....	7.18	7.40	+0.22
No. of Optional Higher Comp. Ratios.....	17	18	+1
Highest Std. C.R. (Crosley, 1950) .....	7.80	8.00	+0.20
(Crosley, 1949) .....			
Lowest Std. C.R. (Willys-Jeep, 1950) .....	6.30	6.48	+0.18
(Buick, 1949) .....			
Highest Optional C.R. (Willys—4-73, 1950) ...	7.50	7.90	+0.40
(Nash—Pontiac, 1949) ..			
Average Displacement .....	249.5	245.3	—4.2
Average Maximum Brake Horsepower.....	111.8	110.9	—0.9
Average R.P.M. at Max. Horsepower.....	3660	3681	+21
Average Horsepower per cubic inch.....	.448	.452	+0.004
Average Brake mean effective pressure, lb/in <sup>2</sup> ..	122.6	122.9	+0.3
Max. H.P./cu.in. ....	.603	.603	—
Lowest H.P./cu.in. ....	0.38	0.38	—
Average lb/H.P.—5 passenger sedan.....	31.7	31.6	—0.1
Rated H.P. with Std. C.R.:			
Under 75 .....	4	4	—
75-99 .....	12	14	+2
100-149 .....	32	38	+6
150-199 .....	8	8	—
Piston Materials:			
Aluminum Alloy .....	50	56	+6
Cast Iron or Steel Alloy.....	6	8	+2
	56	64	



# BUICK

CAR MODEL	Series 40 Synchromesh	Series 40 Dynaflo
<b>ENGINE</b>		
No. Cyl.-Head Type.....	8-1	8-1
Bore & Stroke (In.).....	3-3/32x4-1/8	3-3/32x4-1/8
Displacement (Cu. In.).....	248.1	248.1
A.M.A. Horse Power.....	30.63	30.63
Max. H.P. @ R.P.M.....	115 @ 3600	122 @ 3600
Max. Torque, Lb.-Ft. @ R.P.M....	212 @ 2000	216 @ 2000
Max. Bmp, Lb/In. <sup>2</sup> .....	128.8	131.1
Head Material.....	Cast Iron	Cast Iron
Compression Ratio.....	6.60	7.20
Comp. Press. Lb/In. <sup>2</sup> @ R.P.M....	114 @ 90	120 @ 90
Piston Material.....	A.A.	A.A.
Bearing Material.....		Steel Backed Babbitt
<b>IGNITION</b>		
Spark Plug—Factory Eqpt.....	AC-48	AC-48
Alternate.....		Champ. J-12, AL-A11
Spark Plug Gap.....	.025"	.025"
Breaker Gap.....	.015"	.015"
Cam Angle.....		
Firing Order.....	1-6-2-5-8-3-7-4	1-6-2-5-8-3-7-4
Timing—Crankshaft Degrees....	4°BTC	4°BTC
Adv. Deg.—Centrif.—Vac.....	26-12	26-12
Adv. Begins—Ends—Eng. R.P.M.	400-3000	400-3000
<b>VALVES</b>		
Make & Material.....	Int. T.P. or Eaton or Rich 3140 Exh. T.P. or Rich XCR or 2112N	
Tappet Clear.—Seat Angle.....	Int. .015" H-45° Exh. .015" H-45°	Hydraulic Lifters—45° Hydraulic Lifters—45°
Exhaust Seat Inserts.....	None	None
<b>CARBURETOR</b>		
Make, Model.....	(1)	(1)
Size, Type.....	1-1/8" Dual DD	1-1/8" Dual DD
Float Level.....	(2)	(2)
Choke Control.....	Automatic	Automatic
<b>ENGINE LUBRICATION</b>		
Eng. Oil—Summer—Wint.—		
SAE#.....	See Buick Instruction Book	
Normal Oil Press.—Lbs. @ MPH.	35 @ 35	35 @ 35
Oil Filter—Make.....	AC	AC
<b>CAPACITY</b>		
Oil..... (Qts.)	5-1/2	5-1/2
Water..... (Qts.)	13	14
Trans..... (Pts.)	1-3/8	(3)
Rear Axle..... (Pts.)	4	4
Gasoline..... (Gals.)	19	19
<b>GENERAL DATA (5 pass. Sedan)</b>		
Wheelbase..... (Ins.)	121-1/2	121-1/2
Overall Lgth. Incl. Bumpers.....		
(Ins.)	204	204
Shipping Weight..... (Lbs.)	3740	3838
Tire Size—Rec. Press..... (Lbs.)	7.60x15-24-24	7.60x15-24-24
Rear Axle Ratio—Type.....	4.1(4)	3.9(5)
<b>LOCATION CHASSIS SERIAL NO. Inside Left Front Windshild Pillar Post</b>		
(1) Strom. AAUVR-267 or Car. WCO-725S.		
(2) Strom. 1/32" to 1/16" below bottom of inspection hole—Car. at bottom of inspection hole.		
(3) Dynaflo requires 8-1/2 qts. for refill—plus 1-3/4 pints if completely dry.		
(4) 3.9 optional—(Model 41).		
(5) 3.6 optional—(Model 41).		

**BUICK**

CAR MODEL	Series 50 Sycromesh	Series 50 Dynaflow	Series 70 Dynaflow
<b>ENGINE</b>			
No. Cyl.-Head Type.....	8-1	8-1	8-1
Bore & Stroke (in.).....	3-3/16x4-1/8	3-3/16x4-1/8	3-7/16x4-5/16
Displacement (Cu. In.).....	263.3	263.3	320.2
A.M.A. Horse Power.....	32.51	32.51	37.81
Max. H.P. @ R.P.M.....	124 @ 3600	128 @ 3600	152 @ 3600
Max. Torque, Lb.-Ft. @ R.P.M....	220 @ 2000	225 @ 2000	280 @ 2000
Max. Bmep, Lb./In. <sup>2</sup> .....	126.2	129.0	131.8
Head Material.....	Cast Iron	Cast Iron	Cast Iron
Compression Ratio.....	6.90	7.20	7.20
Comp. Press. Lb./In. <sup>2</sup> @ R.P.M....	118 @ 90	120 @ 90	120 @ 90
Piston Material.....	A.A.	A.A.	A.A.
Bearing Material.....		Steel Backed Durex	
<b>IGNITION</b>			
Spark Plug—Factory Eqpt.....	AC-48	AC-48	AC-48
Alternate.....		Champ. J-12, AL-A11	
Spark Plug Gap.....	.025"	.025"	.025"
Breaker Gap.....	.015"	.015"	.015"
Cam Angle.....			
Firing Order.....		1-6-2-5-8-3-7-4	
Timing—Crankshaft Degrees....	4°BTC	4°BTC	4°BTC
Adv. Deg.—Centrif.—Vac.....	26-12	26-12	26-12
Adv. Begins—Ends—Eng. R.P.M.	400-3000	400-3000	400-3000
<b>VALVES</b>			
Make & Material.....	Int. Exh.	T.P. or Eaton or Rich—3140	
Tappet Clear.—Seat Angle.....	Int. Exh.	T.P. or Rich XCR or 2112N	
Exhaust Seat Inserts.....	None	Hydraulic Lifters—45°	
		Hydraulic Lifters—45°	
		None	None
<b>CARBURETOR</b>			
Make, Model.....	(1)	(1)	(2)
Size, Type.....	1-1/8" Dual	DD1-1/8" Dual	DD1-1/4" Dual
Float Level.....	(3)	(3)	(3)
Choke Control.....	Automatic	Automatic	Automatic
<b>ENGINE LUBRICATION</b>			
Eng. Oil—Summer—Wint.—			
SAE.....		See Buick Instruction Book	
Normal Oil Press.—Lbs. @ MPH.	35 @ 35	35 @ 35	35 @ 35
Oil Filter—Make.....	AC	AC	AC
<b>CAPACITY</b>			
Oil.....(Qts.)	5-1/2	5-1/2	7
Water.....(Qts.)	13	14	17-3/4
Trans.....(Pts.)	1-3/8	(4)	(5)
Rear Axle.....(Pts.)	4	4	4
Gasoline.....(Gals.)	19	19	19
<b>GENERAL DATA (5 pass. Sedan)</b>			
Wheelbase.....(Ins.)	121-1/2	121-1/2	126-1/4
Overall Lgth. Incl. Bumpers.....			
(Ins.)	204	204	208-3/4
Shipping Weight.....(Lbs.)	3745	3843	4135
Tire Size—Rec. Press.....(Lbs.)	7.60x15-24-24	7.60x15-24-24	8.00x15-24-24
Rear Axle Ratio—Type.....	3.9(6)	3.6(7)	3.6(8)

**LOCATION CHASSIS SERIAL NO. Inside Left Front Windshield Pillar Post**

- (1) Strom. AAUVB-267 or Car. WCD-725-S.
- (2) Strom. AAUVB-267 or Car. WCD-726-S.
- (3) Strom.—1/32" to 1/16" below bottom of inspection hole.  
Car.—at bottom of inspection hole.
- (4) Dynaflow requires 8-1/2 qts. for refill—plus 1-3/4 pts. if completely dry.
- (5) Dynaflow requires 10 qts. for refill—plus 1-3/4 pts. if completely dry.
- (6) 3.6 optional (Model 51).
- (7) 3.9 optional (Model 51).
- (8) 3.9 optional (Model 71).

# **CADILLAC**

## **CAR MODEL**

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## **ENGINE**

No. Cyl.-Head Type.....	V-8-I	V-8-I
Bore & Stroke (In.).....	3-13/16x3-5/8	3-13/16x3-5/8
Displacement (Cu. In.).....	331	331
A.M.A. Horse Power.....	46.5	46.5
Max. H.P. @ R.P.M.....	160 @ 3800	160 @ 3800
Max. Torque, Lb.-Ft. @ R.P.M.....	312 @ 1800	312 @ 1800
Max. Bmep, Lb./In. <sup>2</sup> .....	142.0	142.0
Head Material.....	Cast Iron	Cast Iron
Compression Ratio.....	7.50	7.50
Comp. Press. Lb./In. <sup>2</sup> @ R.P.M.....	194 @ 1000	194 @ 1000
Piston Material.....	A.A.	A.A.
Bearing Material.....		Steel Backed Durex

## **IGNITION**

Spark Plug—Factory Eqpt.....	AC 46-5	AC 46-5
Alternate.....		Champ. J-11, AL-A9
Spark Plug Gap.....	.035"	.035"
Breaker Gap.....	.0125" to .0175"	.0125" to .0175"
Cam Angle.....	31° ± 1-1/2°	31° ± 1-1/2°
Firing Order.....	1-8-4-3-6-5-7-2	1-8-4-3-6-5-7-2
Timing—Crankshaft Degrees... 5° BTC		5° BTC
Adv. Deg.—Centrif.—Vac.....	36-20	36-20
Adv. Begins—Ends—Eng. R.P.M.	600-3600	600-3600

## **VALVES**

Make & Material.....Int.	Rich 3140	Rich 3140
Exh.	Rich N82120	Rich N82120
Tappet Clear.—Seat Angle.Int.		Automatic Adjusters—44°
Exh.		Automatic Adjusters—44°
Exhaust Seat Inserts.....	None	None

## **CARBURETOR**

Make, Model.....	Car. WCD-742-S	Car. WCD-742-S
Size, Type.....	1-1/4" Dual DD	1-1/4" Dual DD
Float Level.....	9/64" (1)	9/64" (1)
Choke Control.....	Automatic	Automatic

## **ENGINE LUBRICATION**

Eng. Oil—Summer—Wint.—SAE#.....		See Cadillac Instruction Book
Normal Oil Press.—Lbs. @ MPH.	35 @ 30	35 @ 30
Oil Filter—Make.....	None	None

## **CAPACITY**

Oil.....(Qts.)	5	5
Water.....(Qts.)	18 (2)	18 (2)
Trans.....(Pts.)	3-3/4 (3)	3-3/4 (3)
Rear Axle.....(Pts.)	5	5
Gasoline.....(Gals.)	20	20

## **GENERAL DATA (5 pass. Sedan)**

Wheelbase.....(Ins.)	122	126
Overall Lgth. Incl. Bumpers.....(Ins.)	211-7/8	215-7/8
Shipping Weight.....(Lbs.)	3841 (4)	4036
Tire Size—Rec. Press.....(Lbs.)	8.00x15-24-24	8.00x15-24-24
Rear Axle Ratio—Type.....	3.77 (5)	3.77 (5)

## **LOCATION CHASSIS SERIAL NO. Right Frame Sidebar, Behind Engine Bracket.**

- (1) Between machined surface of float chamber cover and nearest point on float.
- (2) 1 quart additional for heater.
- (3) 2-1/2 pints for refill—Hydra-Matic requires 10-1/2 quarts for refill, 12 quarts dry.
- (4) Add 82# when equipped with Hydra-Matic.
- (5) 3.36 with Hydra-Matic transmission.



CAR MODEL	60	75
<b>ENGINE</b>		
No. Cyl.-Head Type.....	V-8-I	V-8-I
Bore & Stroke (In.).....	3-13/16x3-5/8	3-13/16x3-5/8
Displacement (Cu. In.).....	331	331
A.M.A. Horse Power.....	46.5	46.5
Max. H.P. @ R.P.M.....	160 @ 3800	160 @ 3800
Max. Torque, Lb.-Ft. @ R.P.M....	312 @ 1800	312 @ 1800
Max. Bmep, Lb./In. <sup>2</sup> .....	142.0	142.0
Head Material.....	Cast Iron	Cast Iron
Compression Ratio.....	7.50	7.50
Comp. Press. Lb./In. <sup>2</sup> @ R.P.M....	194 @ 1000	194 @ 1000
Piston Material.....	A.A.	A.A.
Bearing Material.....		Steel Backed Durex
<b>IGNITION</b>		
Spark Plug—Factory Eqpt.....	AC-46-5	AC-46-5
Alternate.....		Champ, J-11, AL-A9
Spark Plug Gap.....	.035"	.035"
Breaker Gap.....	.0125" to .0175"	.0125" to .0175"
Cam Angle.....	31° ± 1-1/2°	31° ± 1-1/2°
Firing Order.....	1-8-4-3-6-5-7-2	1-8-4-3-6-5-7-2
Timing—Crankshaft Degrees... 5°BTC		
Adv. Deg.—Centrif.—Vac.....	36-20	36-20
Adv. Begins—Ends—Eng. R.P.M.	600-3600	600-3600
<b>VALVES</b>		
Make & Material.....Int.	Rich 3140	Rich 3140
Exh.	Rich N82120	Rich N82120
Tappet Clear.—Seat Angle..Int.		Automatic Adjusters—44°
Exh.		Automatic Adjusters—44°
Exhaust Seat Inserts.....	None	None
<b>CARBURETOR</b>		
Make, Model.....	Car. WCD-742-S	Car. WCD-742-S
Size, Type.....	1-1/4" Dual DD	1-1/4" Dual DD
Float Level.....	9/64" (1)	9/64" (1)
Choke Control.....	Automatic	Automatic
<b>ENGINE LUBRICATION</b>		
Eng. Oil—Summer—Wint.—		
SAE#.....		See Cadillac Instruction Book
Normal Oil Press.—Lbs. @ MPH.	35 @ 30	35 @ 30
Oil Filter—Make.....	None	None
<b>CAPACITY</b>		
Oil.....(Qts.)	5	5
Water.....(Qts.)	18 (2)	18 (2)
Trans.....(Pts.)	3-3/4 (3)	3-3/4 (3)
Rear Axle.....(Pts.)	5	5
Gasoline.....(Gals.)	20	20
<b>GENERAL DATA (5 pass. Sedan)</b>		
Wheelbase.....(Ins.)	130	146-3/4
Overall Lgth. Incl. Bumpers.....(Ins.)	224-7/8	236-5/8
Shipping Weight.....(Lbs.)	4146	4509
Tire Size—Rec. Press.....(Lbs.)	8.00x15-24-24	8.20x15-28-28
Rear Axle Ratio—Type.....	3.77 (4)	4.27 (5)
<b>LOCATION CHASSIS SERIAL NO. Right Frame Sidebar, Behind Engine Bracket.</b>		

- (1) Between machined surface of float chamber cover and nearest point on float.
- (2) 1 quart additional for heater.
- (3) 2-1/2 pints for refill—Hydra-Matic requires 10-1/2 quarts for refill, 12 quarts dry.
- (4) 3.36 with Hydra-Matic transmission.
- (5) 3.77 with Hydra-Matic transmission.

**CHRYSLER**

CAR MODEL	C-48 Royal	C-48 Windsor
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**ENGINE**

No. Cyl.-Head Type.....	6-L	6-L
Bore & Stroke (In.).....	3-7/16x4-1/2	3-7/16x4-1/2
Displacement (Cu. In.).....	250.6	250.6
A.M.A. Horse Power.....	28.36	28.36
Max. H.P. @ R.P.M.....	110 @ 3600	116 @ 3600
Max. Torque, Lb.-Ft. @ R.P.M...	208 @ 1600	208 @ 1600
Max. Bmep, Lb./In. <sup>2</sup> .....	125.0	125.0
Head Material.....	Cast Iron	Cast Iron
Compression Ratio.....	7.00	7.00
Comp. Press. Lb./In. <sup>2</sup> @ R.P.M...		120 to 150 @ 150
Piston Material .....	A.A.	A.A.
Bearing Material.....		Steel Backed Babbitt

**IGNITION**

Spark Plug—Factory Eqpt.....	AL-AR5	AL-AR5
Alternate .....		AC-44, Champ. J-8
Spark Plug Gap.....	.035"	.035"
Breaker Gap.....	.020"	.020"
Cam Angle.....	34.5° to 38°	34.5° to 38°
Firing Order.....	1-5-3-6-2-4	1-5-3-6-2-4
Timing—Crankshaft Degrees....	TDC	TDC
Adv. Deg.—Centrif.—Vac.....	22-18	22-18
Adv. Begins—Ends—Eng. R.P.M.	700-2850	700-2850

**VALVES**

Make & Material.....	Int. Exh.	Heat Resistant Steel
Tappet Clear.—Seat Angle.....	Int. .008" H-45° Exh. .010" H-45°	.008" H-45° .010" H-45°
Exhaust Seat Inserts.....	Yes	Yes

**CARBURETOR**

Make, Model.....	Ball & Ball (Car.)	Ball & Ball (Car.)
Size, Type.....	1-1/2" Sin. DD	1-1/2" Sin. DD
Float Level.....	5/64" (1)	5/64" (1)
Choke Control .....	Automatic	Automatic

**ENGINE LUBRICATION**

Eng. Oil—Summer—Wint.—		
SAE#.....	See Chrysler Instruction Book	
Normal Oil Press.—Lbs. @ MPH.	45 to 60 @ 45	45 to 60 @ 45
Oil Filter—Make .....	MoPar	MoPar

**CAPACITY**

Oil .....	(Qts.) 5	5
Water .....	(Qts.) 17	17
Trans. ....	(Pts.) 2-3/4 (2)	3
Rear Axle .....	(Pts.) 3-1/4	3-1/4
Gasoline .....	(Gals.) 17	17

**GENERAL DATA (5 pass. Sedan)**

Wheelbase .....	(Ins.) 125-1/2	125-1/2
Overall Lgth. Incl. Bumpers		
(Ins.)	207-5/8	207-5/8
Shipping Weight .....	(Lbs.) 3655	3765
Tire Size—Rec. Press.....	(Lbs.) 7.60x15-24-24	7.60x15-24-24
Rear Axle Ratio—Type.....	3.9 Hyp. (3)	3.73 Hyp.

**LOCATION CHASSIS SERIAL NO.**

Left Front Door Body Hinge Post

- (1) From top of float chamber to top of float.
- (2) Three pints refill for the hydraulic operated transmission.
- (3) 3.73 with hydraulic operated transmission.



# CHRYSLER

CAR MODEL	C-49 Saratoga	C-49 New Yorker	C-50 Crown Imperial
<b>ENGINE</b>			
No. Cyl.-Head Type.....	8-L	8-L	8-L
Bore & Stroke (In.).....	3-1/4x4-7/8	3-1/4x4-7/8	3-1/4x4-7/8
Displacement (Cu. In.).....	323.5	323.5	323.5
A.M.A. Horse Power.....	33.80	33.80	33.80
Max. H.P. @ R.P.M.....	135 @ 3200	135 @ 3200	135 @ 3200
Max. Torque, Lb.-Ft. @ R.P.M.....	270 @ 1600	270 @ 1600	270 @ 1600
Max. Bmep, Lb./In. <sup>2</sup> .....	125.9	125.9	125.9
Head Material.....	Cast Iron	Cast Iron	Cast Iron
Compression Ratio.....	7.25	7.25	7.25
Comp. Press, Lb./In. <sup>2</sup> @ R.P.M.....		120 to 150 @ 150	
Piston Material.....	A.A.	A.A.	A.A.
Bearing Material.....		Steel Backed Babbitt	
<b>IGNITION</b>			
Spark Plug—Factory Eqpt.....	AL-AR5	AL-AR5	AL-AR5
Alternate.....		AC-44, Champ. J-8	
Spark Plug Gap.....	.035"	.035"	.035"
Breaker Gap.....	.018"	.018"	.018"
Cam Angle.....	27° to 30-1/2°	27° to 30-1/2°	27° to 30-1/2°
Firing Order.....		1-6-2-5-8-3-7-4	
Timing—Crankshaft Degrees... TDC		TDC	TDC
Adv. Deg.—Centrif.—Vac.....	22-18	22-18	22-18
Adv. Begins—Ends—Eng. R.P.M.	700-3100	700-3100	700-3100
<b>VALVES</b>			
Make & Material.....	Int. Exh.	Heat Resistant Steel	Heat Resistant Steel
Tappet Clear.—Seat Angle.....	Int. .008" H-45°	.008" H-45°	.008" H-45°
Exhaust Seat Inserts.....	Exh. .010" H-45°	.010" H-45°	.010" H-45°
	Yes	Yes	Yes
<b>CARBURETOR</b>			
Make, Model.....		Ball & Ball (Car.)	
Size, Type.....	1-1/2" Sin. DD	1-1/2" Sin. DD	1-1/2" Sin. DD
Float Level.....	5/64" (1)	5/64" (1)	5/64" (1)
Choke Control.....	Automatic	Automatic	Automatic
<b>ENGINE LUBRICATION</b>			
Eng. Oil—Summer—Wint.—			
SAE#.....		See Chrysler Instruction Book	
Normal Oil Press.—Lbs. @ MPH.	45 to 60 @ 45	45 to 60 @ 45	45 to 60 @ 50
Oil Filter—Make.....	MoPar	MoPar	MoPar
<b>CAPACITY</b>			
Oil..... (Qts.)	6	6	6
Water..... (Qts.)	21	21	21
Trans..... (Pts.)	3	3	3
Rear Axle..... (Pts.)	3-1/2	3-1/2	5
Gasoline..... (Gals.)	20	20	20
<b>GENERAL DATA (5 pass. Sedan)</b>			
Wheelbase..... (Ins.)	131-1/2	131-1/2	145-1/2
Overall Lgth. Incl. Bumpers..... (Ins.)	213-5/8	213-5/8	230-1/4
Shipping Weight..... (Lbs.)	4170	4190	(2)
Tire Size—Rec. Press..... (Lbs.)	8.20x15-24-24	8.20x15-24-24	8.90x15-24-24
Rear Axle Ratio—Type.....	3.54 Hyp.	3.54 Hyp.	3.58 Hyp.
<b>LOCATION CHASSIS SERIAL NO.</b>			
	Left	Front Door	Body Hinge Post

- (1) From top of float chamber to top of float.  
 (2) Not available on date this booklet went to press.

# CHEVROLET

CAR MODEL	Special & Deluxe Styleline & Fleetline SYNCHROMESH	Deluxe Styleline & Fleetline POWERGLIDE
<b>ENGINE</b>		
No. Cyl.-Head Type.....	6-1	6-1
Bore & Stroke (In.).....	3-1/2x3-3/4	3-9/16x3-15/16
Displacement (Cu. In.).....	216.5	235.5
A.M.A. Horse Power.....	29.4	30.4
Max. H.P. @ R.P.M.....	92 @ 3400	105 @ 3600
Max. Torque, Lb.-Ft. @ R.P.M.....	176 @ 1000-2000	193 @ 1100-2200
Max. Bmep, Lb./In. <sup>2</sup> .....	122.5	123.8
Head Material.....	Cast Alloy Iron	Cast Alloy Iron
Compression Ratio.....	6.60 (1)	6.70 (1)
Comp. Press. Lb./In. <sup>2</sup> @ R.P.M.....	110 ± @ 210-220 RPM (engine hot)	
Piston Material.....	Cast Alloy Iron	Cast Alloy Iron
Bearing Material.....	Steel-Backed Thin Wall Babbitt	
<b>IGNITION</b>		
Spark Plug—Factory Eqpt.....	AC-46-5	AC-46-5
Alternate.....	(2)	(2)
Spark Plug Gap.....	.035"	.035"
Breaker Gap.....	.018"—.024"	.018"—.024"
Cam Angle.....	34°	34°
Firing Order.....		1-5-3-6-2-4
Timing—Crankshaft Degrees....	5° BTC	5° BTC
Adv. Deg.—Centrif.—Vac.....	32.5 to 39.5-20	29 to 33-20
Adv. Begins—Ends—Eng. R.P.M.....	600-3450	600-3700
<b>VALVES</b>		
Make & Material.....	Int. Silchrome Steel Exh. High Chrome Steel	Silchrome Steel High Chrome Steel
Tappet Clear.—Seat Angle.....	Int. .006"—H-30° Exh. .013"—H-45°	Auto. Adj. —30° Auto. Adj. —45°
Exhaust Seat Inserts.....	None	None
<b>CARBURETOR</b>		
Make, Model.....	R.P.—7002050	R.P.—7002051
Size, Type.....	1-7/32" Sin. DD	1-11/32" Sin. DD
Float Level.....	1-9/32" (3)	1-9/32" (3)
Choke Control.....	Manual	Manual
<b>ENGINE LUBRICATION</b>		
Eng. Oil—Summer—Wint.—		
SAE#.....	See Chevrolet Instruction Book	
Normal Oil Press.—Lbs. @ MPH.....	14 ± @ 2000 RPM	14 ± @ 2000 RPM
Oil Filter—Make.....	None	None
<b>CAPACITY</b>		
Oil..... (Qts.)	5-1/2 (4)	5-1/2 (4)
Water..... (Qts.)	15	15
Trans..... (Pts.)	1-1/2	10 qts.
Rear Axle..... (Pts.)	3-1/2	3-1/2
Gasoline..... (Gals.)	16	16
<b>GENERAL DATA (5 pass. Sedan)</b>		
Wheelbase..... (Ins.)	115	115
Overall Lgth. Incl. Bumpers.....		
(Ins.)	197-1/2	197-1/2
Shipping Weight..... (Lbs.)	(5)	(6)
Tire Size—Rec. Press..... (Lbs.)	6.70x15-4 ply 24-24	6.70x15-4 ply 24-24
Rear Axle Ratio—Type.....	4.11 Hyp.	3.55 Hyp.
<b>LOCATION CHASSIS SERIAL NO.</b>		
	Left Front Door Hinge Pillar	

- (1) No optional compression ratio.
- (2) Champion's recommendation is J-11; Auto-Lite's is AL-A9.
- (3) From machined surface to bottom of float.
- (4) 5 quarts for refill.
- (5) Styleline Deluxe 3150, Fleetline Deluxe 3145, Styleline Special 3120, Fleetline Special 3115.
- (6) Styleline Deluxe—Powerglide—3280, Fleetline Deluxe—Powerglide—3285.

CAR MODEL	CD	Hotshot & Super Sports—VC
<b>ENGINE</b>		
No. Cyl.—Head Type.....	4-1	4-1
Bore & Stroke (In.).....	2-1/2x2-1/4	2-1/2x2-1/4
Displacement (Cu. In.).....	44	44
A.M.A. Horse Power.....	10	10
Max. H.P. @ R.P.M.....	26.5 @ 5400	26.5 @ 5400
Max. Torque, Lb.-Ft. @ R.P.M...	32.5 @ 3000	32.5 @ 3000
Max. Bmep, Lb./In. <sup>2</sup> .....	111.3	111.3
Head Material.....	Cast Iron	Cast Iron
Compression Ratio.....	8.00	8.00
Comp. Press. Lb./In. <sup>2</sup> @ R.P.M.		125 to 135 @ 260
Piston Material .....	A.A.	A.A.
Bearing Material .....		Steel Backed Babbitt
<b>IGNITION</b>		
Spark Plug—Factory Eqpt.....	AL-AN7	AL-AN7
Alternate .....		Champ. J-8, AC-45
Spark Plug Gap.....	.025"	.025"
Breaker Gap.....	.020"	.020"
Cam Angle.....	44°	44°
Firing Order.....	1-3-4-2	1-3-4-2
Timing—Crankshaft Degrees...	12° BTC	12° BTC
Adv. Deg.—Centrif.—Vac.....	34-0	34-0
Adv. Begins—Ends—Eng. R.P.M.	800-3000	800-3000
<b>VALVES</b>		
Make & Material.....Int.	A.I. or T.P. 3140	A.I. or T.P. 3140
Exh.	A.I. or T.P. 2112	A.I. or T.P. 2112
Tappet Clear.—Seat Angle, Int.	.004" to .006" C-45°	.004" to .006" C-45°
Exh.	.007" to .009" C-45°	.007" to .009" C-45°
Exhaust Seat Inserts.....	None	None
<b>CARBURETOR</b>		
Make, Model.....	Tillotson DY9C	Tillotson DY9C
Size, Type.....	7/8" Sin. OD	7/8" Sin. DD
Float Level.....	1-27/64" (1)	1-27/64" (1)
Choke Control.....	Manual	Manual
<b>ENGINE LUBRICATION</b>		
Eng. Oil—Summer—Wint.—		
SAE.....		See Crosley Instruction Book
Normal Oil Press.—Lbs. @ MPH.	35 to 50 @ 30	35 to 50 @ 30
Oil Filter—Make .....	Fram	Fram
<b>CAPACITY</b>		
Oil .....	(Qts.) 2 (2)	2 (2)
Water .....	(Qts.) 4	4
Trans. ....	(Pts.) 1	1
Rear Axle .....	(Pts.) 1-1/2	1-1/2
Gasoline .....	(Gals.) 6-1/2	6-1/2
<b>GENERAL DATA (5 pass. Sedan)</b>		
Wheelbase .....	(Ins.) 80	85
Overall Lgth. Incl. Bumpers		
(Ins.)	148	137
Shipping Weight .....	(Lbs.) 1363	1175
Tire Size—Rec. Press.....	(Lbs.) 4.50x12-25-25	4.50x12-25-25
Rear Axle Ratio—Type.....	5.17 S.B.	5.17 S.B.
<b>LOCATION CHASSIS SERIAL NO.</b>		
	Left Center Firewall Under Hood	

- (1) From face of body gasket to top of raised seam encircling float—with upper body upside down.  
 (2) 3 quarts with oil filter.



# DESOTO-DODGE

CAR MODEL	DeSoto S-14	Dodge D-34	Dodge D-32
<b>ENGINE</b>			
No. Cyl.-Head Type.....	6-L	6-L	6-L
Bore & Stroke (In.).....	3-7/16x4-1/4	3-1/4x4-5/8	3-1/4x4-5/8
Displacement (Cu. In.).....	236.6	230.2	230.2
A.M.A. Horse Power.....	28.36	25.35	25.35
Max. H.P. @ R.P.M.....	112 @ 3600	103 @ 3600	103 @ 3600
Max. Torque, Lb.-Ft. @ R.P.M..	195 @ 1600	190 @ 1200	190 @ 1200
Max. Bmep, Lb./In. <sup>2</sup> .....	124.2	127.5	127.5
Head Material.....	Cast Iron	Cast Iron	Cast Iron
Compression Ratio.....	7.00	7.00	7.00
Comp. Press. Lb./In. <sup>2</sup> @ R.P.M...		120 to 150 @ 150	
Piston Material.....	A.A.	A.A.	A.A.
Bearing Material.....		Steel Backed Babbitt	
<b>IGNITION</b>			
Spark Plug—Factory Eqpt.....	AL-AR5	AL-AR5	AL-AR5
Alternate.....		AC-44, Champ. J-8	
Spark Plug Gap.....	.035"	.035"	.035"
Breaker Gap.....	.020"	.020"	.020"
Cam Angle.....	34-1/2° to 38°	34-1/2° to 38°	34-1/2° to 38°
Firing Order.....	1-5-3-6-2-4	1-5-3-6-2-4	1-5-3-6-2-4
Timing—Crankshaft Degrees...	TDC	TDC	TDC
Adv. Deg.—Centrif.—Vac.....	22-20	22-18	22-18
Adv. Begins—Ends—Eng. R.P.M.	700-2850	700-2850	700-2850
<b>VALVES</b>			
Make & Material.....	Int. Heat Resistant Steel	Various Alloy Steels	
Exh.....	Heat Resistant Steel		
Tappet Clear.—Seat Angle.....	Int. .008" H-45°	.008" H-45°	.008" H-45°
Exh.....	.010" H-45°	.010" H-45°	.010" H-45°
Exhaust Seat Inserts.....	Yes	Yes	Yes
<b>CARBURETOR</b>			
Make, Model.....	Ball & Ball (Car.) Stromberg	Stromberg	
Size, Type.....	1-1/2" Sln. DD	1-1/2" Sln. DD	(Special)
Float Level.....	5/64" (1)	1/8" (2)	1/8" (2)
Choke Control.....	Automatic	Automatic	Automatic
<b>ENGINE LUBRICATION</b>			
Eng. Oil—Summer—Wint.—			
SAE#.....	See DeSoto or Dodge Instruction Book		
Normal Oil Press.—Lbs. @ MPH.	45 @ 40	40 @ 25	40 @ 25
Oil Filter—Make.....	Purolator	Purolator	Purolator
<b>CAPACITY</b>			
Oil.....(Qts.)	5	5	5
Water.....(Qts.)	17	15	15
Trans.....(Pts.)	3 (3)	2-3/4 (4)	2-3/4
Rear Axle.....(Pts.)	3-1/4	3-1/4	3-1/4
Gasoline.....(Gals.)	17	17	17
<b>GENERAL DATA (5 pass. Sedan)</b>			
Wheelbase.....(Ins.)	125-1/2	123-1/2	115
Overall Lgth. Incl. Bumpers			
(Ins.)	207	202-7/8	196-1/4
Shipping Weight.....(Lbs.)	(5)	(6)	3200
Tire Size—Rec. Press.....(Lbs.)	7.60x15-24-24	7.10x15-24-24	6.70x15-24-24
Rear Axle Ratio—Type.....	3.9 (7)	3.9	3.9
<b>LOCATION CHASSIS SERIAL NO.</b>			
	Left	Front	Door Body Hinge Post
(1) From top of float chamber without gasket to top of float.			
(2) From top of float chamber to top center of float.			
(3) 2-3/4 pts. with 3 speed transmission.			
(4) Three pints with gyromatic transmission.			
(5) DeLuxe 3525—Custom 3640.			
(6) Coronet 3410—Meadowbrook 3395.			
(7) 3.9 with hydraulic operated transmission—3.73 optional.			

CAR MODEL	Ford DeLuxe & Custom DeLuxe-6	Ford DeLuxe & Custom DeLuxe-8
<b>ENGINE</b>		
No. Cyl.-Head Type.....	6-L	V-8-L
Bore & Stroke (In.).....	3.3x4.4	3-3/16x3-3/4
Displacement (Cu. In.).....	225.9	239.4
A.M.A. Horse Power.....	26.1	32.5
Max. H.P. @ R.P.M.....	95 @ 3300	100 @ 3600
Max. Torque, Lb.-Ft. @ R.P.M.....	180 @ 1200	181 @ 2000
Max. Bmp, Lb./In. <sup>2</sup> .....	120.0	113.6
Head Material.....	Cast Iron	Cast Iron
Compression Ratio.....	6.80	6.80
Comp. Press, Lb./In. <sup>2</sup> @ R.P.M.....	110 @ 60	110 @ 60
Piston Material.....	A.A.—Steel Strut	
Bearing Material.....	Steel Backed Copper Lead Alloy	
<b>IGNITION</b>		
Spark Plug—Factory Eqpt.....	Champ. H-10	Champ. H-10
Alternate.....	AC 45-L, AL-AL5	
Spark Plug Gap.....	.029" to .032"	.029" to .032"
Breaker Gap.....	.024" to .026"	.014" to .016"
Cam Angle.....	35° to 38°	26° to 28-1/2°
Firing Order.....	1-5-3-6-2-4	1-5-4-8-6-3-7-2
Timing—Crankshaft Degrees.....	TDC	2° BTC
Adv. Deg.—Centrif.—Vac.....	(1)	(2)
Adv. Begins—Ends—Eng. R.P.M.....		
<b>VALVES</b>		
Make & Material.....	Int. Ford or Eaton Sil. #1	
Exh. Ford or Eaton Ni. Chrome Alloy		
Tappet Clear.—Seat Angle.....	Int. .009" to .011" C-45°	.013" to .015" C-45°
Exh. .013" to .015" C-45°		.017" to .019" C-45°
Exhaust Seat Inserts.....	Yes	Yes
<b>CARBURETOR</b>		
Make, Model.....	Holley (847FS)	Ford 8BA
Size, Type.....	1.217" Sin. DD	.94" Dual DD
Float Level.....	1.322 to 1.355 (3)	1.322 to 1.355 (3)
Choke Control.....	Manual	Manual
<b>ENGINE LUBRICATION</b>		
Eng. Oil—Summer—Wint.—		
SAE#.....	See Ford Instruction Book	
Normal Oil Press.—Lbs. @ MPH.....	57 to 60 @ 40	57 to 60 @ 40
Oil Filter—Make.....	Fram or Purolator	Fram
<b>CAPACITY</b>		
Oil.....(Qts.)	(4)	(4)
Water.....(Qts.)	17.3	22
Trans.....(Pts.)	4 (5)	4 (5)
Rear Axle.....(Pts.)	3-1/2	3-1/2
Gasoline.....(Gals.)	17	17
<b>GENERAL DATA (5 pass. Sedan)</b>		
Wheelbase.....(Ins.)	114	114
Overall Lgth. Incl. Bumpers.....(Ins.)	196.8	196.8
Shipping Weight.....(Lbs.)	3062	3093
Tire Size—Rec. Press....(Lbs.)	6.70x15-24-24	6.70x15-24-24
Rear Axle Ratio—Type.....	3.73 (6)	3.73 (6)
<b>LOCATION CHASSIS SERIAL NO. Left Hand Engine Side of Dash</b>		
(1) Full vacuum actuated distributor—Maximum advance with wide open throttle at 4000 RPM is 23°—At cruising torque maximum advance is 26°.		
(2) Full vacuum actuated distributor—Maximum advance with wide open throttle at 4000 RPM is 21°—At cruising torque maximum advance is 27°.		
(3) From bowl cover flange to bottom of float in closed position.		
(4) 5 quarts dry including filter—4 quarts refill.		
(5) 3¼ pints refill—4½ pints when equipped with overdrive.		
(6) 4.10 with overdrive.		



# HUDSON

CAR MODEL	Pacemaker 500	Super Six 501	Commodore Six 502
<b>ENGINE</b>			
No. Cyl-Head Type.....	6-L	6-L	6-L
Bore & Stroke (In.).....	3-9/16x3-7/8	3-9/16x4-3/8	3-9/16x4-3/8
Displacement (Cu. In.).....	232	262	262
A.M.A. Horse Power.....	30.4	30.4	30.4
Max. H.P. @ R.P.M.....	112 @ 4200	123 @ 4000	123 @ 4000
Max. Torque, Lb.-Ft. @ R.P.M....	175 @ 1600	200 @ 1600	200 @ 1600
Max. Bmp, Lb./In. <sup>2</sup> .....	113.8	115.0	115.0
Head Material.....	Cast Iron	Cast Iron	Cast Iron
Compression Ratio.....	6.7 (1)	6.7 (1)	6.7 (1)
Comp. Press. Lb./In. <sup>2</sup> @ R.P.M....		119 @ 125	119 @ 125
Piston Material.....	A.A.	A.A.	A.A.
Bearing Material.....		Steel Backed Babbitt	
<b>IGNITION</b>			
Spark Plug—Factory Eqpt.....	Champ. H-8 (2)	Champ. H-8 (2)	Champ. H-8 (2)
Alternate.....		AC-44, AL-A5	
Spark Plug Gap.....	.032"	.032"	.032"
Breaker Gap.....	.020"	.020"	.020"
Cam Angle.....	38°	38°	38°
Firing Order.....	1-5-3-6-2-4	1-5-3-6-2-4	1-5-3-6-2-4
Timing—Crankshaft Degrees... TDC			
Adv. Deg.—Centrif.—Vac.....	20-10	18-8	18-8
Adv. Begins—Ends—Eng. R.P.M.	600-2400	900-4000	900-4000
<b>VALVES</b>			
Make & Material.....Int.	Eaton N.E. 8645	Eaton N.E. 8645	Eaton N.E. 8645
Exh. Eaton 2112			
Tappet Clear.—Seat Angle.....Int.	.008" H-45°	.008" H-45°	.008" H-45°
Exh. .010" H-45°			
Exhaust Seat Inserts.....	None	None	None
<b>CARBURETOR</b>			
Make, Model.....	Car. WAI-749-S	Car. WDO-647-SA	Car. WDO-647-SA
Size, Type.....	1-1/4" Sin. DD	1-1/4" Dual DD	1-1/4" Dual DD
Float Level.....	1/2" (3)	3/16" (4)	3/16" (4)
Choke Control.....	Automatic	Automatic	Automatic
<b>ENGINE LUBRICATION</b>			
Eng. Oil—Summer—Wint.—SAE#		See Hudson Instruction Book	
Normal Oil Press.—Lbs. @ MPH.	40 @ 30	40 @ 30	40 @ 30
Oil Filter—Make.....	None (5)	None (5)	None (5)
<b>CAPACITY</b>			
Oil.....(Qts.)	7 (6)	7 (6)	7 (6)
Water.....(Qts.)	18-1/2 (7)	19 (7)	19 (7)
Trans.....(Pts.)	2 (8)	2 (8)	2 (8)
Rear Axle.....(Pts.)	3-1/2	3-1/2	3-1/2
Gasoline.....(Gals.)	20	20	20
<b>GENERAL DATA (5 pass. Sedan)</b>			
Wheelbase.....(Ins.)	119	124	124
Overall Lgth. Incl. Bumpers.....(Ins.)	201-1/2	208-1/8	208-1/8
Shipping Weight.....(Lbs.)	3510	3590	3655
Tire Size—Rec. Press.....(Lbs.)	7.10x15-26-24	7.10x15-26-24	7.10x15-26-24
Rear Axle Ratio—Type.....	4.10 (9)	4.10 (10)	4.10 (10)

LOCATION CHASSIS SERIAL NO.	Right Front Pillar Post
(1) 7.2 optional with aluminum head.	
(2) Champ H-8 with aluminum head.	
(3) Distance from seat of float (at free end) to tip on lower edge of float chamber cover, when needle is seated.	
(4) From float to bowl cover when needle is seated—cover inverted.	
(5) Fram available at extra cost.	
(6) 7-1/2 quarts for dry engine.	
(7) Add 1 quart when equipped with heater.	
(8) 3-1/4 pints with overdrive.	
(9) 4.55 and 3.82 optional.	
(10) 4.55 optional.	

CAR MODEL	Super Eight 503	Commodore Eight 504
<b>ENGINE</b>		
No. Cyl.-Head Type.....	8-L	8-L
Bore & Stroke (In.).....	3x4-1/2	3x4-1/2
Displacement (Cu. In.).....	254	254
A.M.A. Horse Power.....	28.8	28.8
Max. H.P. @ R.P.M.....	128 @ 4200	128 @ 4200
Max. Torque, Lb.-Ft. @ R.P.M....	198 @ 1600	198 @ 1600
Max. Bmep, Lb./In. <sup>2</sup> .....	117.6	117.6
Head Material.....	Cast Iron	Cast Iron
Compression Ratio.....	6.7 (1)	6.7 (1)
Comp. Press. Lb./In. <sup>2</sup> @ R.P.M....	119 @ 125	119 @ 125
Piston Material.....	A.A.	A.A.
Bearing Material.....	Steel Backed Babbitt	
<b>IGNITION</b>		
Spark Plug—Factory Eqpt.....	Champ. H-8 (2)	Champ. H-8 (2)
Alternate.....	AC-44, AL-A5	
Spark Plug Gap.....	.032"	.032"
Breaker Gap.....	.017"	.017"
Cam Angle.....	27°	27°
Firing Order.....	1-6-2-5-8-3-7-4	1-6-2-5-8-3-7-4
Timing—Crankshaft Degrees....	TDC	TDC
Adv. Deg.—Centrif.—Vac.....	35-8	35-8
Adv. Begins—Ends—Eng. R.P.M....	600-3400	600-3400
<b>VALVES</b>		
Make & Material.....	Int. Eaton N.E. 8645	Eaton N.E. 8645
	Exh. Eaton Silc. XB	Eaton Silc. XB
Tappet Clear.—Seat Angle.....	Int. .008" H-45°	.008" H-45°
	Exh. .010" H-45°	.010" H-45°
Exhaust Seat Inserts.....	None	None
<b>CARBURETOR</b>		
Make, Model.....	Car. WDO-648-SA	Car. WDO-648-SA
Size, Type.....	1-1/4" Dual DD	1-1/4" Dual DD
Float Level.....	13/64" (3)	13/64" (3)
Choke Control.....	Automatic	Automatic
<b>ENGINE LUBRICATION</b>		
Eng. Oil—Summer—Wint.—		
SAE#.....	See Hudson Instruction Book	
Normal Oil Press.—Lbs. @ MPH.		
Oil Filter—Make.....	None	None
<b>CAPACITY</b>		
Oil.....(Qts.)	7 (4)	7 (4)
Water.....(Qts.)	17 (5)	17 (5)
Trans.....(Pts.)	2 (6)	2 (6)
Rear Axle.....(Pts.)	3-1/2	3-1/2
Gasoline.....(Gals.)	20	20
<b>GENERAL DATA (5 pass. Sedan)</b>		
Wheelbase.....(Ins.)	124	124
Overall Lgth. Incl. Bumpers.....		
	(Ins.) 208-1/8	208-1/8
Shipping Weight.....(Lbs.)	3605	3675
Tire Size—Rec. Press.....(Lbs.)	7.10x15-26-24	7.10x15-26-24
Rear Axle Ratio—Type.....	4.1 (7)	4.1 (7)
<b>LOCATION CHASSIS SERIAL NO.</b>		
	Right Front Pillar Post	
(1) 7.2 optional with aluminum head. (2) Champ H-8 with aluminum head. (3) From float to bowl cover when needle is seated—cover inverted. (4) Eight quarts dry engine. (5) Add 1 quart when equipped with heater. (6) 3-1/4 pints with overdrive. (7) 4.55 optional.		

# SPARK PLUG HEAT

		A Extremely Hot	B Very Hot	C Hot	D Warm
AC	10 mm	108 MS		106	
	14 mm	48	47 47 Com	46-5 46 46 Com	45 45L Com* 45 Com 45L*
	18 mm	88S Com 88L Com*	88 87S Com 87 Com	86 86 Com	85 Com 85S Com
	3/8"	78L Com*	77 Com 77L Com* 78 78S	76 76 Com 76S	75 Com
CHAM- PION	10 mm	Y-8		Y-6	
	14 mm	J-14	J-12	J-11 H-11*	J-8 H-10*
	18 mm	9 Com*	C-7 C-15	8 Com	7 15A
	3/8"	3 Com* 22	2 Com L*	C-4	6
AUTO- LITE	10 mm	P6 PR6			
	14 mm	A11 AR10		A9 AR8 ARLS*	A7 AN7* AL7*
	18 mm	B11		B9 BR8	B7
	3/8"	T11		T9	T7
EDI- SON	10 mm	2-S		2-S	
	14 mm		52-S	53-S	55-S L-55-S
	18 mm	42-T	Z-19 43-S Z-146-S	43-TS	44-HS Z-147-S
	3/8"	31-T Z-162-S	X-46	35-S	37-TS
GLOBE UNION INC.	10 mm	G0-110		G0-165	
	14 mm	G4-85	G4-120	G4-150	
	18 mm	G8-85	G8-125	G8-165	
	3/8"	G7-110		G7-150	
FIRE- STONE	10 mm	T-60-F		T-40-F	
	14 mm	F-120-F		F-80-F	F-90-LF*
	18 mm	M-120-CF		M-80-CF	
	3/8"	S-120-CF		S-80-CF	
TORQUE WRENCH CHART	Always use a spark plug socket wrench or a torque wrench. These wrenches are readily obtainable and are the only kind which will avoid distortion of the plug and insure the insulator against damage or breakage.				

\*Long reach.



# RANGE COMPARISONS

E Cool	F Cold	G Very Cold	H Extremely Cold		
104 Com 104		103 Com		10 mm	AC
44 Com 44-5 Com 44	43L* 43L Com*	43 Com	42-5 Com 42 Com	14 mm	
84 83S Com 83 Com	82 Com 82S Com		81S Com	18 mm	
	74 74 Com	73 Com		7/8"	
Y-4A				10 mm	CHAM- PION
J-7	J-6 H-9 Com*	H-8*	J-2	14 mm	
13 6 Com	5 Com	R-7	R-1	18 mm	
1 Com	0 Com			7/8"	
	P4 PR4			10 mm	AUTO- LITE
	A5 AR5 AN5 AL5* ARL5*	A3		14 mm	
B7	B5 BR4			18 mm	
T7				7/8"	
4-S				10 mm	EDI- SON
56-S	L-56-S	57-TS	58-S	14 mm	
45-S 46-TS	48-TS	49-S	49-TS Z-149-S	18 mm	
38-TS	39-TS	40-TS		7/8"	
	G0-230			10 mm	GLOBE UNION INC.
G4-185	G4-220			14 mm	
G8-195	G8-220			18 mm	
G7-175	G7-195			7/8"	
T-40-F		T-20-F		10 mm	FIRE- STONE
F-40-F	F-50-LF*	F-30-F		14 mm	
	M-40-CF			18 mm	
	S-40-CF			7/8"	
Average torque wrench pressures recommended for standard plugs in vehicles. All pressures listed are based on spark plug and engine threads being clean.					TORQUE WRENCH CHART
Plug Thread	Cast Iron Heads	Aluminum Heads			
10 mm	14 lb-ft	12 lb-ft			
14 mm	30 lb-ft	28 lb-ft			
18 mm	34 lb-ft	32 lb-ft			
7/8"	37 lb-ft	35 lb-ft			

# KAISER-FRAZER

CAR MODEL	Kaiser	Frazer
<b>ENGINE</b>		
No. Cyl.-Head Type.....	6-L	6-L
Bore & Stroke (In.).....	3-5/16x4-3/8	3-5/16x4-3/8
Displacement (Cu. In.).....	226.2	226.2
A.M.A. Horse Power.....	26.3	26.3
Max. H.P. @ R.P.M.....	100 @ 3600 (1)	112 @ 3600
Max. Torque, Lb.-Ft. @ R.P.M...	180 @ 1400	180 @ 1400
Max. Bmp. Lb./In. <sup>2</sup> .....	120.0	120.0
Head Material.....	Cast Iron	Cast Iron
Compression Ratio.....	7.30	7.30
Comp. Press. Lb./In. <sup>2</sup> @ R.P.M...	120 @ 70	120 @ 70
Piston Material.....	A.A.	A.A.
Bearing Material.....		Steel Backed Babbitt
<b>IGNITION</b>		
Spark Plug—Factory Eqpt.....	AL-A5	AL-A5
Alternate.....		AC-44, Champ. J-8
Spark Plug Gap.....	.032"	.032"
Breaker Gap.....	.020"	.020"
Cam Angle.....	38°	38°
Firing Order.....	1-5-3-6-2-4	1-5-3-6-2-4
Timing—Crankshaft Degrees...	4°BTC	4°BTC
Adv. Deg.—Centrif.—Vac.....	20-15	20-15
Adv. Begins—Ends—Eng. R.P.M.	700-3400	700-3400
<b>VALVES</b>		
Make & Material.....Int.		SAE 8845 or SAE 3140
Exh.	Silc. XCR	Silc. XCR
Tappet Clear.—Seat Angle.....Int.	.014" C-30°	.014" C-30°
Exh.	.014" C-45°	.014" C-45°
Exhaust Seat Inserts.....	None	None
<b>CARBURETOR</b>		
Make, Model.....	Car. WCD-622-SA (2)	Car. WCD-685-SA
Size, Type.....	1-9/16" Sin. DD	1-1/4" Dual DD
Float Level.....	3/8" (3)	9/64" (3)
Choke Control.....	Automatic	Automatic
<b>ENGINE LUBRICATION</b>		
Eng. Oil—Summer—Wint.—		
SAE#.....	See Kaiser or Frazer Instruction Book	
Normal Oil Press.—Lbs. @ MPH.	35 @ 30	35 @ 30
Oil Filter—Make.....	Purolator	Purolator
<b>CAPACITY</b>		
Oil.....(Qts.)	5	5
Water.....(Qts.)	13-1/2	13-1/2
Trans.....(Pts.)	2-1/2 (4)	2-1/2 (4)
Rear Axle.....(Pts.)	3	3
Gasoline.....(Gals.)	21	21
<b>GENERAL DATA (5 pass. Sedan)</b>		
Wheelbase.....(Ins.)	123-1/2	123-1/2
Overall Lgth. Incl. Bumpers.....(Ins.)	206-7/16	207-9/16
Shipping Weight.....(Lbs.)	3311 (5)	3455
Tire Size—Rec. Press.....(Lbs.)	7.10x15-24-24	7.10x15-24-24
Rear Axle Ratio—Type.....	4.09 (6)	4.09 (7)
<b>LOCATION CHASSIS SERIAL NO.</b>		
	Left Front Pillar Post	
(1) Kaiser Deluxe 112 @ 3600.		
(2) Kaiser Deluxe equipped with Car. WCD-685-SA.		
(3) From top of boss to top of float seam—float cover inverted.		
(4) 3-1/2 pints with overdrive—Kaiser Special not equipped with overdrive.		
(5) Kaiser Deluxe 3341.		
(6) 3.91 optional—4.27 with overdrive on Kaiser Deluxe.		
(7) 3.91 optional—4.27 with overdrive.		



# LINCOLN-MERCURY

CAR MODEL	Lincoln	Lincoln Cosmopolitan	Mercury
ENGINE			
No. Cyl.-Head Type.....	V-8-L	V-8-L	V-8-L
Bore & Stroke (In.).....	3-1/2x4-3/8	3-1/2x4-3/8	3-3/16x4
Displacement (Cu. In.).....	336.7	336.7	255.4
A.M.A. Horse Power.....	39.2	39.2	32.5
Max. H.P. @ R.P.M.....	152 @ 3600	152 @ 3600	110 @ 3600
Max. Torque, Lb.-Ft. @ R.P.M.....	265 @ 2000	265 @ 2000	200 @ 2000
Max. Bmep, Lb./In. <sup>2</sup> .....	118.5	118.5	118.0
Head Material.....	Cast Iron	Cast Iron	Cast Iron
Compression Ratio.....	7.0	7.0	6.80
Comp. Press. Lb./In. <sup>2</sup> .....	110	110	115
Piston Material.....	A.A.—Steel Strut		
Bearing Material.....	Steel Backed Copper-lead Alloy		
IGNITION			
Spark Plug—Factory Eqpt.....	Champ. H-10	Champ. H-10	Champ. H-10
Alternate .....		AC-45L, AL-AL5	
Spark Plug Gap.....	.029" to .032"	.029" to .032"	.029" to .032"
Breaker Gap.....	.014" to .016"	.014" to .016"	.014" to .016"
Cam Angle.....	26° to 28-1/2°	26° to 28-1/2°	26° to 28-1/2°
Firing Order.....		1-5-4-8-6-3-7-2	
Timing—Crankshaft Degrees...	4°BTC	4°BTC	2°BTC
Adv. Deg.—Centrif.—Vac.....	(1)	(1)	(2)
Adv. Begins—Ends—Eng. R.P.M.....			
VALVES			
Make & Material.....	Int. Exh.	Ford & Eaton Sil. #1	
Tappet Clear.—Seat Angle.....	Int. Exh.	Ford & Eaton Nickel Chrome Alloy	
Exhaust Seat Inserts.....	Yes	Yes	Yes
CARBURETOR			
Make, Model.....	Holley (587)	Holley (587)	Holley (493.2)
Size, Type.....	1-5/32"	1-5/32"	1-1/32"
Float Level.....	Dual DD	Dual DD	Dual DD
Choke Control.....	Automatic	Automatic	1/3" ± 1/32" (3) Automatic
ENGINE LUBRICATION			
Eng. Oil—Summer—Wint.—			
SAE#.....	See Lincoln	or Mercury	Instruction Book
Normal Oil Press.—Lbs. @ MPH.....	50 @ 40	50 @ 40	57 @ 40
Oil Filter—Make.....	Fram	Fram	Fram
CAPACITY			
Oil..... (Qts.)	(4)	(4)	(5)
Water..... (Qts.)	34-1/2	34-1/2	22-1/4
Trans..... (Pts.)	3-1/2 (6)	3-1/2 (6)	3-1/2
Rear Axle..... (Pts.)	4	4	3
Gasoline..... (Gals.)	19-1/2	21-1/2	19-1/2
GENERAL DATA (5 pass. Sedan)			
Wheelbase..... (Ins.)	121	125	118
Overall Lgth. Incl. Bumpers..... (Ins.)	213.0	220.5	206.8
Shipping Weight..... (Lbs.)	4107 (7)	4349 (7)	3417
Tire Size—Rec. Press..... (Lbs.)	8.00x15-26-24	8.20x15-24-24	7.10x15-24-24
Rear Axle Ratio—Type.....	3.91 (8)	3.91 (8)	3.91 (9)
LOCATION CHASSIS SERIAL NO. Left Hand Engine Side of Dash			

- (1) Full vacuum actuated distributor—Maximum advance with wide open throttle at 4000 RPM is 20½°—At cruising torque maximum advance is 23°.
- (2) Full vacuum actuated distributor—Maximum advance with wide open throttle at 4000 RPM is 16°—At cruising torque maximum advance is 21°.
- (3) From bowl cover flange to fuel level.
- (4) 6½ quarts dry including filter—6 quarts refill.
- (5) 6 quarts dry including filter—5 quarts refill.
- (6) Hydramatic requires 12 quarts.
- (7) With Hydramatic.
- (8) 4.27 with overdrive—3.31 with Hydramatic.
- (9) 4.27 optional—4.27 with overdrive—3.91 optional with overdrive.

# NASH

CAR MODEL	Rambler 50-10	Statesman 50-40	Ambassador 50-60
<b>ENGINE</b>			
No. Cyl.-Head Type.....	6-L	6-L	6-I
Bore & Stroke (In.).....	3-1/8x3-3/4	3-1/8x4	3-3/8x4-3/8
Displacement (Cu. In.).....	172.6	184	234.8
A.M.A. Horse Power.....	23.44	23.44	27.34
Max. H.P. @ R.P.M.....	75 @ 3800	85 @ 3800	115 @ 3400
Max. Torque, Lb.-Ft. @ R.P.M.....	133 @ 1400	140 @ 1600	210 @ 1600
Max. Bmp. Lb/In. <sup>2</sup> .....	116.1	114.8	134.8
Head Material.....	Cast Iron	Cast Iron	Cast Iron
Compression Ratio.....	7.25	7.0 (1)	7.3 (2)
Comp. Press. Lb/In. <sup>2</sup> @ Cr. Sp.....	120	120	130
Piston Material.....	A.A.	A.A.	A.A.
Bearing Material.....		Steel Backed Babbitt	
<b>IGNITION</b>			
Spark Plug—Factory Eqpt.....	AL-A5	AL-A5	AC-44 or AL-A5
Alternate.....	AC-44, Champ. J-8	J-8	Champ. J-8
Spark Plug Gap.....	.030"	.030"	.030"
Breaker Gap.....	.018" to .024"	.018" to .024"	.018" to .024"
Cam Angle.....	35°	35°	35°
Firing Order.....		1-5-3-6-2-4	
Timing—Crankshaft Degrees.....	TDC	TDC	TDC
Adv. Deg.—Centrif.—Vac.....	22-15	22-15	28-12
Adv. Begins—Ends—Eng. R.P.M.....	600-2800	600-2800	600-2700
<b>VALVES</b>			
Make & Material.....	Int. Various 3140	SAE 8645	
	Exh. A.I. or Rich 2112	A.I. or Eaton 2112	
Tappet Clear.—Seat Angle.....	Int. .015" H-45°	.015" H-45°	.015" H-45°
	Exh. .015" H-45°	.015" H-45°	.018" H-45°
Exhaust Seat Inserts.....	None	None	None
<b>CARBURETOR</b>			
Make, Model.....	Car. WAI	Car. WAI-694-S	Car. WAI-746
Size, Type.....	1-1/4" Sin. DD	1-1/4" Sin. DD	1-1/4" Sin. DD
Float Level.....	1/2" (3)	1/2" (3)	1/2" (3)
Choke Control.....	Automatic	Automatic	Automatic
<b>ENGINE LUBRICATION</b>			
Eng. Oil—Summer—Wint.—			
SAE.....		See Nash Instruction Book	
Normal Oil Press.—Lbs. @ MPH.....	50 @ 30	50 @ 30	50 @ 30
Oil Filter—Make.....	None (4)	None (4)	None (4)
<b>CAPACITY</b>			
Oil.....(Qts.)	5	5	6
Water.....(Qts.)	15 (5)	15 (5)	18 (5)
Trans.....(Pts.)	2-1/4 (6)	2-1/4 (6)	2-1/4 (7)
Rear Axle.....(Pts.)	3	3	4
Gasoline.....(Gals.)	20	20	20
<b>GENERAL DATA (5 pass. Sedan)</b>			
Wheelbase.....(Ins.)	100	112	121
Overall Lgth. Incl. Bumpers.....(Ins.)	176	201	210
Shipping Weight.....(Lbs.)	2500	2965	3350
Tire Size—Rec. Press.....(Lbs.)	5.90x15-24-24	6.40x15-24-24	7.10x15-24-24
Rear Axle Ratio—Type.....	3.77	4.4 (8)	4.10 (9)
<b>LOCATION CHASSIS SERIAL NO. Under Hood Right Hand Side</b>			

- (1) 7.35 optional.
- (2) 7.50 optional.
- (3) From top of projection on bowl cover to top of soldered seam at front end of float—with bowl cover inverted.
- (4) Optional dealer installation at extra cost.
- (5) With heater.
- (6) 3½ pints with overdrive.
- (7) 3½ pints with overdrive—when equipped with Hydra-Matic 11 quarts for refill, 12 quarts when unit is completely dry.
- (8) 4.9 with overdrive.
- (9) 4.44 with overdrive—3.54 with Hydra-Matic.

# OLDSMOBILE

CAR MODEL	Futuramic 76	Futuramic 88	Futuramic 98
<b>ENGINE</b>			
No. Cyl.-Head Type.....	6-L	V-8-I	V-8-I
Bore & Stroke (In.).....	3-7/32x4-3/8	3-3/4x3-7/16	3-3/4x3-7/16
Displacement (Cu. In.).....	257.14	303.73	303.73
A.M.A. Horse Power.....	29.9	45.0	45.0
Max. H.P. @ R.P.M.....	105 @ 3400	135 @ 3600	135 @ 3600
Max. Torque, Lb.-Ft. @ R.P.M....	202 @ 1400	263 @ 1800	263 @ 1800
Max. Bmep, Lb/In. <sup>2</sup> .....	118.5	130.7	130.7
Head Material.....	Cast Iron	Cast Iron	Cast Iron
Compression Ratio.....	6.50	7.25	7.25
Comp. Press. Lb/In. <sup>2</sup> @ R.P.M....	160 @ 1000	183 @ 1000	183 @ 1000
Piston Material.....	A.A.	A.A. Steel Strut	
Bearing Material.....		Steel Backed Durex	
<b>IGNITION</b>			
Spark Plug—Factory Eqpt.....	AC-45	AC-45	AC-45
Alternate.....	Ch. J-11, AL-AN7	Champ. J-11, AL-A9	
Spark Plug Gap.....	.040"	.030"	.030"
Breaker Gap.....	.021"	.015"	.015"
Cam Angle.....	35°	22°	22°
Firing Order.....	1-5-3-6-2-4	1-8-7-3-6-5-4-2	
Timing—Crankshaft Degrees.....	TDC	2-1/2° BTC	2-1/2° BTC
Adv. Deg.—Centrif.—Vac.....	22-16	30-20	30-20
Adv. Begins—Ends—Eng. R.P.M....	500-3200	600-3700	600-3700
<b>VALVES</b>			
Make & Material.....	Int. Various 3140	Various 3140	Various 3140
Exh. Silc. XCR		Silc. XCR	Silc. XCR
Tappet Clear.—Seat Angle.....	Int. .008" H-30°	Automatic Adjusters—45°	
Exh. .011" H-45°		Automatic Adjusters—45°	
Exhaust Seat Inserts.....	None	None	None
<b>CARBURETOR</b>			
Make, Model.....	WAI-764-S(1)	Rochester Products	7002570 (2)
Size, Type.....	1-1/2" Sln. DD	1-7/16" Dual DD	1-7/16" Dual DD
Float Level.....	1/2" (3)	23/32" (4)	23/32" (4)
Choke Control.....	Automatic	Automatic	Automatic
<b>ENGINE LUBRICATION</b>			
Eng. Oil—Summer—Wint.—	See Oldsmobile Instruction Book		
SAE#.....			
Normal Oil Press.—Lbs. @ MPH....	40 @ 30	40 @ 30	40 @ 30
Oil Filter—Make.....	(5)	(5)	(5)
<b>CAPACITY</b>			
Oil.....(Qts.)	5	5	5
Water.....(Qts.)	18-1/2	21-1/2	21-1/2
Trans.....(Pts.)	2 (6)	3 (6)	3 (6)
Rear Axle.....(Pts.)	3-3/4	3-3/4	3-3/4
Gasoline.....(Gals.)	18	18	18
<b>GENERAL DATA (5 pass. Sedan)</b>			
Wheelbase.....(Ins.)	119-1/2	119-1/2	122
Overall Lgth. Incl. Bumpers.....			
(Ins.)	202	202	209
Shipping Weight.....(Lbs.)	3331	3531	3750
Tire Size—Rec. Press.....(Lbs.)	7.10x15-24-24	7.60x15-24-24	7.60x15-24-24
Rear Axle Ratio—Type.....	4.1 (7)	3.64 (8)	3.9 (9)
<b>LOCATION CHASSIS SERIAL NO.</b>			
	Left Front Door Pillar Post		

- (1) WAI—763-S with Hydra-Matic.
- (2) Car. WGD also used.
- (3) From projection on bowl cover to upper edge of soldered float seam with the cover-float assembly inverted.
- (4) From cover to upper edge of soldered seam with assembly inverted—Car. WGD 1/4" from top of cover to top of float with float cover inverted.
- (5) AC optional at extra cost.
- (6) Hydra-Matic drive requires 10.5 qts. for refill.
- (7) 4.30 optional—3.63 with Hydra-Matic, with 3.9 optional.
- (8) 3.9 optional—3.42 with Hydra-Matic.
- (9) 3.64 with Hydra-Matic, with 3.90 optional.

Brief Passenger Car Data for 1950

February 15, 1950



# PACKARD

CAR MODEL	Eight	Super Eight	Custom Eight
ENGINE			
No. Cyl.-Head Type.....	8-L	8-L	8-L
Bore & Stroke (In.).....	3-1/2x3-3/4	3-1/2x4-1/4	3-1/2x4-5/8
Displacement (Cu. In.).....	288	327	356
A.M.A. Horse Power.....	39.2	39.2	39.2
Max. H.P. @ R.P.M.....	130 @ 3600	145 @ 3600	160 @ 3600
Max. Torque, Lb.-Ft. @ R.P.M....	226 @ 2000	266 @ 2000	282 @ 2000
Max. Bmep, Lb./In. <sup>2</sup> .....	118.2	122.5	119.3
Head Material.....	Cast Iron	Cast Iron	Cast Iron
Compression Ratio.....	7.00	7.00	7.00
Comp. Press. Lb./In. <sup>2</sup> @ R.P.M....			
Piston Material.....	A.A.	A.A.	A.A.
Bearing Material.....		Steel Backed Durex	
IGNITION			
Spark Plug—Factory Eqpt.....	Auto-Lite A5 or AC 46-5 or Champ. J-8		
Alternate.....			
Spark Plug Gap.....		.025" to .030"	
Breaker Gap.....	.0125" to .0175"	.0125" to .0175"	.0125" to .0175"
Cam Angle.....	31°	27°	27°
Firing Order.....		1-6-2-5-8-3-7-4	
Timing—Crankshaft Degrees....	6°BTC	6°BTC	6°BTC
Adv. Deg.—Centrif.—Vac.....	16°-14°	16°-14°	24°-11°
Adv. Begins—Ends—Eng. R.P.M....	600-3200	600-3200	500-3800
VALVES			
Make & Material.....	Int. NE-8645	NE-8645	NE-8645
	Exh. 2112	2112	2112
Tappet Clear.—Seat Angle.....	Int. .007" H-30°	.007" H-30°	(1)
	Exh. .010" H-45°	.010" H-45°	(2)
Exhaust Seat Inserts.....	None	None	None
CARBURETOR			
Make, Model.....	Car. WGD-728-SA	Car. WDO-643-SSA	Car. WDO-531-SA
Size, Type.....	1-1/4" Dup. DD	1-1/4" Dup. DD	1-1/4" Dup. DD
Float Level.....	1-3/64" (3)	5/32" (4)	5/32" (4)
Choke Control.....	Automatic	Automatic	Automatic
ENGINE LUBRICATION			
Eng. Oil—Summer—Wint.—			
SAE.....		See Packard Instruction Book	
Normal Oil Press.....	40	40	50
Oil Filter—Make.....	None	None	Purolator
CAPACITY			
Oil.....(Qts.)	7	7	7
Water.....(Qts.)	18 (5)	19 (5)	19 (5)
Trans.....(Pts.)	2 (6)	2 (6)	24
Rear Axle.....(Pts.)	4	4	6
Gasoline.....(Gals.)	17	20	20
GENERAL DATA (5 pass. Sedan)			
Wheelbase.....(Ins.)	120	127	127
Overall Lgth. Incl. Bumpers			
	(Ins.) 204-11/16	211-11/16	213-1/4
Shipping Weight.....(Lbs.)	3815	3870	4310
Tire Size—Rec. Press.....(Lbs.)	7.60x15-24-24	7.60x15-24-24	8.20x15-24-24
Rear Axle Ratio—Type.....	3.9 (7)	3.9 (8)	3.54
LOCATION CHASSIS SERIAL NO. Plate Left Top Side of Cowl			

- (1) Automatic Adjusters 30°.
- (2) Automatic Adjusters 45°.
- (3) From bottom of float bowl cover to top of float.
- (4) Below top of bowl.
- (5) 2 pints additional when equipped with heater.
- (6) 1 1/4 pints additional for overdrive. Ultramatic drive requires 24 pints.
- (7) 4.1 with overdrive, 3.9 with Ultramatic drive.
- (8) 4.1 with overdrive, 3.54 with Ultramatic drive.

# PLYMOUTH

CAR MODEL	DeLuxe P-20	Special DeLuxe P-20	DeLuxe P-19
<b>ENGINE</b>			
No. Cyl.-Head Type.....	6-L	6-L	6-L
Bore & Stroke (In.).....	3-1/4x4-3/8	3-1/4x4-3/8	3-1/4x4-3/8
Displacement (Cu. In.).....	217.8	217.8	217.8
A.M.A. Horse Power.....	25.35	25.35	25.35
Max. H.P. @ R.P.M.....	97 @ 3600	97 @ 3600	97 @ 3600
Max. Torque, Lb.-Ft. @ R.P.M....	175 @ 1200	175 @ 1200	175 @ 1200
Max. Bmep, Lb./In. <sup>2</sup> .....	121.2	121.2	121.2
Head Material.....	Cast Iron	Cast Iron	Cast Iron
Compression Ratio.....	7.00	7.00	7.00
Comp. Press. Lb./In. <sup>2</sup> @ R.P.M....		120 to 150 @ 150	
Piston Material.....	A.A.	A.A.	A.A.
Bearing Material.....		Steel Backed Babbitt	
<b>IGNITION</b>			
Spark Plug—Factory Eqpt.....	AL-AR5	AL-AR5	AL-AR5
Alternate.....		AC-44, Champ. J-8	
Spark Plug Gap.....	.035"	.035"	.035"
Breaker Gap.....	.020"	.020"	.020"
Cam Angle.....	34-1/2° to 38°	34-1/2° to 38°	34-1/2° to 38°
Firing Order.....	1-5-3-6-2-4	1-5-3-6-2-4	1-5-3-6-2-4
Timing—Crankshaft Degrees... TDC			
Adv. Deg.—Centrif.—Vac.....	22-18	22-18	22-18
Adv. Begins—Ends—Eng. R.P.M.	700-2850	700-2850	700-2850
<b>VALVES</b>			
Make & Material.....Int.		Various Alloy Steels	
Exh.....		Heat Resistant Steel	
Tappet Clear.—Seat Angle.Int.	.008" H-45°	.008" H-45°	.008" H-45°
Exh.....	.010" H-45°	.010" H-45°	.010" H-45°
Exhaust Seat Inserts.....	Yes	Yes	Yes
<b>CARBURETOR</b>			
Make, Model.....		Ball & Ball (Car.)	
Size, Type.....		1-1/2" Sin. DD (Special)	
Float Level.....	5/64" (1)	5/64" (1)	5/64" (1)
Choke Control.....	Automatic	Automatic	Automatic
<b>ENGINE LUBRICATION</b>			
Eng. Oil—Summer—Wint.—			
SAE.....		See Plymouth Instruction Book	
Normal Oil Press.—Lbs. @ MPH.	40 @ 20	40 @ 20	40 @ 20
Oil Filter—Make.....	Purolator	Purolator	Purolator
<b>CAPACITY</b>			
Oil.....(Qts.)	5	5	5
Water.....(Qts.)	15	15	15
Trans.....(Pts.)	2-3/4	2-3/4	2-3/4
Rear Axle.....(Pts.)	3-1/4	3-1/4	3-1/4
Gasoline.....(Gals.)	17	17	17
<b>GENERAL DATA (5 pass. Sedan)</b>			
Wheelbase.....(Ins.)	118-1/2	118-1/2	111
Overall Lgth. Incl. Bumpers.....(Ins.)	192-5/8	192-5/8	186-1/2
Shipping Weight.....(Lbs.)	3068	3072	2946
Tire Size—Rec. Press.....(Lbs.)	6.70x15-24-24	6.70x15-24-24	6.40x15-24-24
Rear Axle Ratio—Type.....	3.90	3.90	3.73
<b>LOCATION CHASSIS SERIAL NO.</b>			
	Left	Front Door	Body Hinge Post

(1) From top of float chamber without gasket to top of float.



# PONTIAC

CAR MODEL	25-Streamliner & Chieftain 6	27-Streamliner & Chieftain 8
<b>ENGINE</b>		
No. Cyl.-Head Type.....	6-L	8-L
Bore & Stroke (In.).....	3-9/16x4	3-3/8x3-3/4
Displacement (Cu. In.).....	239.2	268.2
A.M.A. Horse Power.....	30.4	36.4
Max. H.P. @ R.P.M.....	90 @ 3400	108 @ 3600
Max. Torque, Lb.-Ft. @ R.P.M....	178 @ 1200	208 @ 1800
Max. Bmpg, Lb/In. <sup>2</sup> .....	112.2	116.9
Head Material.....	Cast Iron	Cast Iron
Compression Ratio.....	6.50 (1)	6.50 (1)
Comp. Press, Lb/In. <sup>2</sup> @ R.P.M....	160 @ 1000	156 @ 1000
Piston Material.....	C.N.A.	C.N.A.
Bearing Material.....		Steel Backed Babbitt
<b>IGNITION</b>		
Spark Plug—Factory Eqpt.....	AC-45	AC-45
Alternate .....		Champ. J-8, AL-AN7
Spark Plug Gap.....	.025"	.025"
Breaker Gap.....	.022"	.016"
Cam Angle.....	35°	26°
Firing Order.....	1-5-3-6-2-4	1-6-2-5-8-3-7-4
Timing—Crankshaft Degrees... 2°-6° BTC		2°-6° BTC
Adv. Deg.—Centrif.—Vac.....	26-17	25-22
Adv. Begins—Ends—Eng. R.P.M.	600-4100	500-4200
<b>VALVES</b>		
Make & Material.....	Int. Rich V Steel	Rich V Steel
	Exh. Rich 2112 or	T.P. Silic. XB
Tappet Clear.—Seat Angle.....	Int. .011" to .013" H-30°	.011" to .013" H-30°
	Exh. .011" to .013" H-45°	.011" to .013" H-45°
Exhaust Seat Inserts.....	None	None
<b>CARBURETOR</b>		
Make, Model.....	Car. WAI-717-S(2)	Car. WCD-719-S(3)
Size, Type.....	1-5/16" Sin. DD	1-3/16" Dual DD
Float Level.....	7/16" (4)	3/16" (5)
Choke Control.....	Automatic	Automatic
<b>ENGINE LUBRICATION</b>		
Eng. Oil—Summer—Wint.—		
SAE.....		See Pontiac Instruction Book
Normal Oil Press.—Lbs. @ MPH.	35-40 @ 40	35-40 @ 40
Oil Filter—Make.....	None	None
<b>CAPACITY</b>		
Oil..... (Qts.)	5	5
Water..... (Qts.)	18	20-1/2
Trans..... (Pts.)	1-3/4 (6)	1-3/4 (6)
Rear Axle..... (Pts.)	3-1/4	3-1/4
Gasoline..... (Gals.)	17-1/2	17-1/2
<b>GENERAL DATA (5 pass. Sedan)</b>		
Wheelbase..... (Ins.)	120	120
Overall Lgth. Incl. Bumpers		
(Ins.)	202-1/2	202-1/2
Shipping Weight..... (Lbs.)	(7)	(8)
Tire Size—Rec. Press..... (Lbs.)	7.10x15-24-24 (9)	7.10x15-24-24 (9)
Rear Axle Ratio—Type.....	4.10 (10)	3.9 (11)
<b>LOCATION CHASSIS SERIAL NO.</b>		Left Front Pillar Post
(1) 7.50 optional. (2) Car. WAI-718-S used with Hydra-Matic drive. (3) Car. WCD-720-S used with Hydra-Matic drive. (4) Between projection on bowl cover and seam on float. (5) Bowl cover to seam of float by use of Car. Gauge ± T109-162. (6) Hydra-Matic drive requires 11 qts. G.M. Hydra-Matic drive fluid. (7) Chieftain 3299—Streamliner 3304. (8) Chieftain 3384—Streamliner 3389. (9) 7.60x15-22-20 optional. (10) 3.9 and 4.3 optional—3.63 with Hydra-Matic drive. (11) 4.1 and 3.63 optional—3.63 with Hydra-Matic drive.		

## STUDEBAKER

CAR MODEL	Champion 9G	Commander 17A	Land Cruiser 17A
<b>ENGINE</b>			
No. Cyl.-Head Type.....	6-L	6-L	6-L
Bore & Stroke (In.).....	3x4	3-5/16x4-3/4	3-5/16x4-3/4
Displacement (Cu. In.).....	169.6	245.6	245.6
A.M.A. Horse Power.....	21.6	26.33	26.33
Max. H.P. @ R.P.M.....	85 @ 4000	102 @ 3200	102 @ 3200
Max. Torque, Lb.-Ft. @ R.P.M....	138 @ 2400	205 @ 1200	205 @ 1200
Max. Bmp. Lb/In. <sup>2</sup> .....	122.8	126.2	126.2
Head Material.....	Cast Iron	Cast Iron	Cast Iron
Compression Ratio.....	7.0 (1)	7.0 (1)	7.0 (1)
Comp. Press. Lb/In. <sup>2</sup> @ R.P.M....	120 @ 150	120 @ 150	120 @ 150
Piston Material.....	A.A.	A.A.	A.A.
Bearing Material.....		Steel Backed Babbitt	
<b>IGNITION</b>			
Spark Plug—Factory Eqpt.....	Champ. J-7	Champ. J-7	Champ. J-7
Alternate.....		AC-44, AL-A5	
Spark Plug Gap.....	.0225" to .0275"	.0225" to .0275"	.0225" to .0275"
Breaker Gap.....	.020"	.022"	.022"
Cam Angle.....	38°-40°	31°-37°	31°-37°
Firing Order.....	1-5-3-6-2-4	1-5-3-6-2-4	1-5-3-6-2-4
Timing—Crankshaft Degrees....	2°BTC	2°BTC	2°BTC
Adv. Deg.—Centrif.—Vac.....	14-18	20-12	20-12
Adv. Begins—Ends—Eng. R.P.M.	800-2800	800-2800	800-2800
<b>VALVES</b>			
Make & Material.....Int.	Rich or Eaton Chrome Nickel Steel		
	Exh. Rich or Eaton 2112	Rich or Eaton 2112	
Tappet Clear.—Seat Angle.....Int.	.016" C-45°	.016" C-45°	.016" C-45°
	Exh. .016" C-45°	.016" C-45°	.016" C-45°
Exhaust Seat Inserts.....	None	None	None
<b>CARBURETOR</b>			
Make, Model.....	Car. WE-715-S	Strom. BXOV-26	Strom. BXOV-26
Size, Type.....	1-1/4" Sin. DD	1-1/4" Sin. DD	1-1/4" Sin. DD
Float Level.....	3/8" (2)	5/8" (3)	5/8" (3)
Choke Control.....	Automatic	Automatic	Automatic
<b>ENGINE LUBRICATION</b>			
Eng. Oil—Summer—Wint.—	See Studebaker Instruction Book		
SAE#.....			
Normal Oil Press.—Lbs. @ MPH.	40 @ 25-30	40 @ 25-30	40 @ 25-30
Oil Filter—Make.....	None (4)	Fram	Fram
<b>CAPACITY</b>			
Oil.....(Qts.)	5	6	6
Water.....(Qts.)	10	13-1/2	13-1/2
Trans.....(Pts.)	1.5 (With O.D. 2.2) (5)	2.4 (With O.D. 3.0) (5)	
Rear Axle.....(Pts.)	2-1/2	3	3
Gasoline.....(Gals.)	18	18	18
<b>GENERAL DATA (5 pass. Sedan)</b>			
Wheelbase.....(Ins.)	113	120	124
Overall Lgth. Incl. Bumpers.....(Ins.)	197-1/4	207-7/8	211-7/8
Shipping Weight.....(Lbs.)	(6)	(7)	3355
Tire Size—Rec. Press.....(Lbs.)	6.40x15-26-24	7.60x15-24-20	7.60x15-24-20
Rear Axle Ratio—Type.....	4.10 (8)	4.09 (9)	4.09 (9)

## LOCATION CHASSIS SERIAL NO. Left Front Door Lock Pillar Post

- (1) 7.5 optional.
- (2) Between boss on bowl cover and far edge of float seam.
- (3) Fuel level measured from top of float chamber.
- (4) Fram optional at extra cost.
- (5) Models with overdrive—individual drain plugs and filler plugs.
- (6) DeLuxe 2750—Regal DeLuxe 2755.
- (7) DeLuxe 3255—Regal DeLuxe 3265.
- (8) 4.56 with overdrive.
- (9) 4.55 with overdrive.

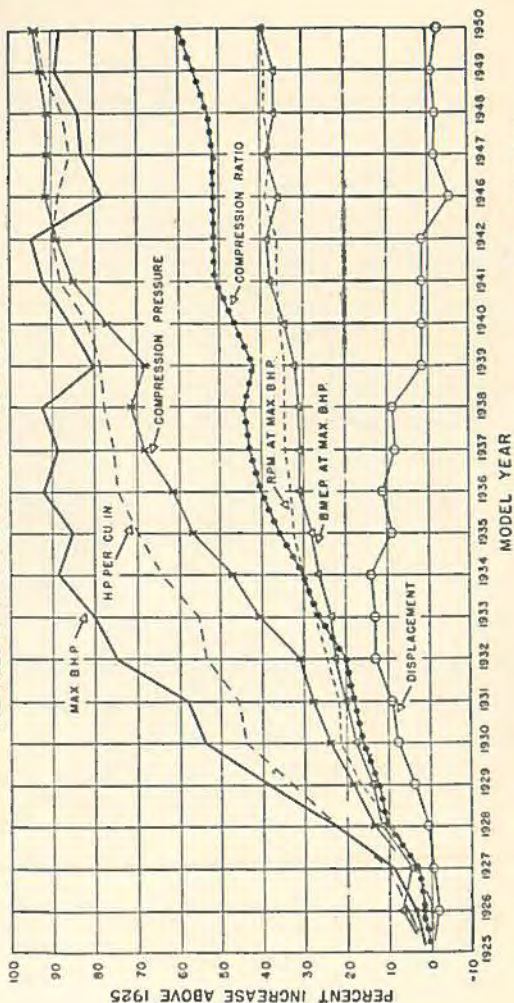
# WILLYS

CAR MODEL	CJ-3A Jeep	4-73	6-73
ENGINE			
No. Cyl.-Head Type.....	4-L	4-F	6-L
Bore & Stroke (In.).....	3-1/8x4-3/8	3-1/8x4-3/8	3-1/8x3-1/2
Displacement (Cu. In.).....	134.2	134.2	161.0
A.M.A. Horse Power.....	15.63	15.63	23.45
Max. H.P. @ R.P.M.....	60 @ 4000	72 @ 4000	75 @ 4000
Max. Torque, Lb.-Ft. @ R.P.M.....	105 @ 2000	114 @ 2000	124 @ 2000
Max. Bmep, Lb./In. <sup>2</sup> .....	118.1	128.0	116.1
Head Material.....	Cast Iron	Cast Iron	Cast Iron
Compression Ratio.....	6.48 (1)	7.40 (2)	6.90
Comp. Press, Lb./In. <sup>2</sup> @ R.P.M.....	115 @ 185	125 @ 185	125 @ 185
Piston Material.....	A.A.	A.A.	A.A.
Bearing Material.....	Steel Backed Babbitt Lined		
IGNITION			
Spark Plug—Factory Eqpt.....	AL-AN7 or Champ. J-7		
Alternate.....	AC-44	AC-44	AC-44
Spark Plug Gap.....	.030"	.030"	.030"
Breaker Gap.....	.020"	.020"	.020"
Cam Angle.....	41°	51°	38.5°
Firing Order.....	1-3-4-2	1-3-4-2	1-5-3-6-2-4
Timing—Crankshaft Degrees....	5°BTC	TDC	TDC
Adv. Deg.—Centrif.—Vac.....	22-0	22-10	24-12
Adv. Begins—Ends—Eng. R.P.M.....	600-3000	600-4000	700-3000
VALVES			
Make & Material.....	Int. Various 3140	Various 3140	Various 3140
Exh.....	Various Unilloy 2112		
Tappet Clear.—Seat Angle.....	Int. .016" C-45°	.018" C-45°	.016" C-45°
Exh.....	.016" C-45°	.016" C-45°	.016" C-45°
Exhaust Seat Inserts.....	None	None	None
CARBURETOR			
Make, Model.....	Carter 596-S	Car. YF	Car. 631-S (3)
Size, Type.....	1" DD	1-5/16" Sin.DD	1-1/4" DD
Float Level.....	3/8" (4)	5/16" (5)	5/16" (5)
Choke Control.....	Manual	Manual	Manual
ENGINE LUBRICATION			
Eng. Oil—Summer—Wint.—	See Willys-Overland Instruction Book		
SAE#.....			
Normal Oil Press.—Lbs. @ MPH.....	35 @ 30	35 @ 30	35 @ 30
Oil Filter—Make.....	Fram or Purolator	(6)	None
CAPACITY			
Oil..... (Qts.)	4	4	5
Water..... (Qts.)	11	11	10
Trans..... (Pts.)	3 (7)	1-1/2 (8)	1-1/2 (8)
Rear Axle..... (Pts.)	2-3/4 (9)	2	2
Gasoline..... (Gals.)	10.5	15	15
GENERAL DATA (5 pass. Sedan)			
Wheelbase..... (Ins.)	80	104	104
Overall Lgth. Incl. Bumpers.....			
(Ins.)	122-3/4	174-13/16	174-13/16
Shipping Weight..... (Lbs.)	2037	2875	2845
Tire Size—Rec. Press..... (Lbs.)	6.00x16-28-28	6.70x15-24-24	6.70x15-24-24
Rear Axle Ratio—Type.....	5.38 (10)	5.38 (11)	5.38 (11)
LOCATION CHASSIS SERIAL NO. Plate on Dash			
Plate on Left Floor Rise			

- (1) 7.00 optional.
- (2) 7.90 optional.
- (3) Zenith 28 BV-10 also used in production.
- (4) From top of float to bottom of float bowl cover.
- (5) From seam on top of float to bottom of float bowl cover.
- (6) Fram or Purolator optional.
- (7) Transfer case—4 pints—standard on Jeep.
- (8) 1-1/2 pints additional for overdrive.
- (9) Front axle 2-1/2 pints.
- (10) Both front and rear axles.
- (11) 5.38 standard with overdrive—4.88 standard without overdrive.



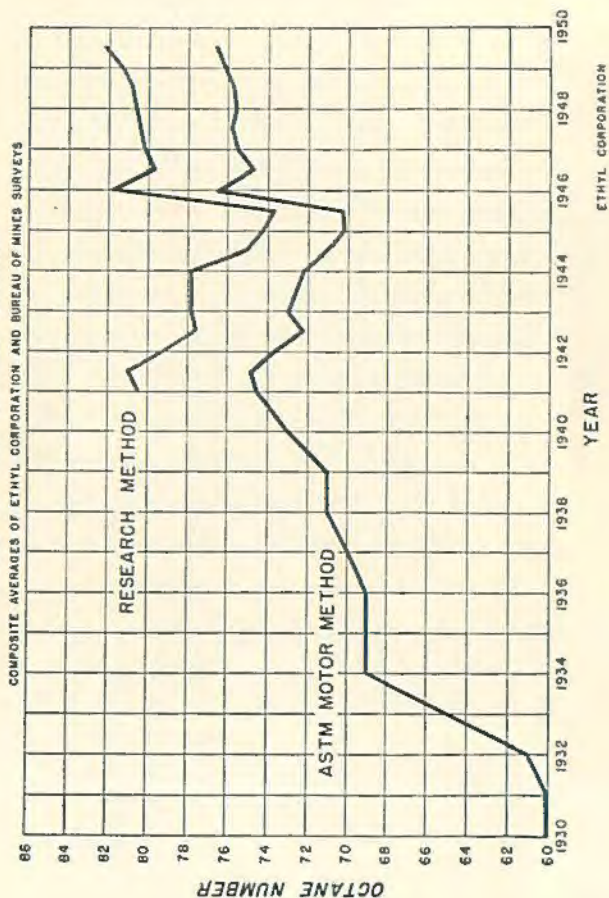
# TRENDS OF AMERICAN PASSENGER CAR ENGINE DESIGN SINCE 1925 AVERAGES OF VALUES LISTED IN TRADE PUBLICATIONS



ETHYL CORPORATION



# TREND IN ANTIKNOCK QUALITY OF REGULAR GASOLINES SOLD IN THE UNITED STATES



# TREND IN ANTIKNOCK QUALITY OF PREMIUM GASOLINES SOLD IN THE UNITED STATES

